Amendments to the Specification:

Please replace the title of the specification with the following amended title:

TITLE: BAZMI'S [[SIX STROKE]] SIX-STROKE ENGINE WITH INTAKE-EXHAUST VALVES

Please replace paragraph [0002] with the following amended paragraph:

[0002] This application is also based on and incorporates herein by reference U.S. Patent No. 1,259,728, entitled "Engine Valve Mechanism [[",]] ," filed on Mar.12, 1917, and U.S. Patent No. 1,992,721, entitled "Valve Mechanism for Internal Combustion Engine [[",]] ," filed on Feb.3, 1933, and U.S. Patent No. 2,420,136, entitled "Six Cycle Engine [[",]] ," filed on Oct.11, 1944.

Please replace paragraph [0004] with the following amended paragraph:

[0004] Valves functioning as both intake and exhaust valves are conventionally known from U.S. Patent No. 1,259,728. A valve or valves in a combustion chamber open in an exhaust stroke and remain ~~opened~~ open in the intake stroke of the next cycle. Therefore, each valve operates as both intake valve and exhaust valve in order to improve engine efficiency.

Please replace paragraph [0005] with the following amended paragraph:

[0005] One of the problems with the above systems is that , because there is no interval between an exhaust stroke and the intake stroke of the next cycle, some of the exhaust gases

are drawn into the cylinder in the next intake stroke. This reduces the engine efficiency. There are also moving ~~means~~ parts such as sleeve valves in the cylinder head that increase friction and require extra lubrication. Moreover, inlet ports and outlet ports were designed in a manner that , even if there was an interval between an exhaust stroke and the intake stroke of the next cycle, some of the gases of the exhaust stroke would be drawn into the cylinder in the intake stroke of the next cycle.

Please replace paragraph [0007] with the following amended paragraph:

[0007] There are various modes of cycling the intake charge and exhaust gases during the operation of the six-stroke engines to improve energy efficiency. But a six-stroke internal combustion engine with intake-exhaust valves utilizing stroke five and stroke six as an interval between an exhaust stroke and the intake stroke of the next cycle is not ~~to be~~ known.

Please replace paragraph [0009] with the following amended paragraph:

[0009] The main object of the present invention is to increase the area of intake and exhaust valves and ports in order to generate a large power and torque and to improve engine efficiency. In this invention, all of the valves in the combustion chamber function as both intake valves and exhaust valves [[,]] ; in other words, air or fuel-air mixture goes into a cylinder via all of the combustion chamber valves in an intake stroke and in an exhaust stroke, the exhaust gases are expelled from the cylinder via the same valves. The inlet ports and outlet ports are connected to each other in the cylinder head. Therefore, in this engine the area of the intake and exhaust valves and ports increases by two times in comparison with the area of the intake and exhaust valves and ports in a traditional engine with the same number of valves in the combustion chamber. It should be noted that the name of said combustion chamber valves is intake-exhaust valves or [[( ]] inlet-outlet valves [[ )]].

Please replace paragraph [0010] with the following amended paragraph:

[0010] Special exhaust valves are mounted in the side of the cylinder head, outside the combustion chamber in the outlet ports. Said exhaust valves are closed in the intake stroke and are open in the exhaust stroke. As a result, exhaust gases are expelled from the cylinder and cylinder head via the outlet ports, and said exhaust gases do not go into the inlet ports in the exhaust stroke. Also, in the intake stroke, exhaust gases of the previous exhaust stroke are not drawn into the cylinder.

Please replace paragraph [0011] with the following amended paragraph:

[0011] There is a need for an interval at the end of the exhaust stroke during which exhaust gases are expelled from the cylinder head completely. There is also a need for a mechanism to close the combustion chamber valves (intake-exhaust valves) at the end of the exhaust stroke and open them at the beginning of the intake stroke of the next cycle within the interval. Therefore, the fifth stroke and the sixth stroke are considered for the engine related to the invention [[,]] ; in other words, this engine operates on a six-stroke cycle.

Please replace paragraph [0012] with the following amended paragraph:

[0012] ~~Especial~~ Special cams are designed for the valves of the engine. The radius and circumference of said cams are fifty percent larger than the radius and circumference of the traditional ones used in a four-stroke engine in order to cover all of the six strokes. In this case, there is no need to change the camshaft-to-crankshaft gear ratio used in a traditional four-stroke engine.

Please replace paragraph [0032] with the following amended paragraph:

[0032] Exhaust gases do not go into the inlet ports A1 and B1 in the exhaust stroke, because air is coming into said inlet ports due to the suction of the previous intake strokes. In order to make the engine start and work ~~smoother~~ more smoothly and more ~~efficient~~ efficiently, Reed valves 4 can be mounted in the inlet ports.

Please replace paragraph [0036] with the following amended paragraph:

[0036] As it was aforementioned, the engine is a six-stroke type. Therefore, a working cycle does not correspond to 720 degrees but 1080 degrees of crankshaft angle. In order not to change the camshaft-to-crankshaft ratio used in a four-stroke engine, the circumference of the cams connected to the valves A2, B2, A4 and B4 are designed fifty percent larger than that of the traditional ones. Therefore, the larger cams can cover the six strokes. As a result, the valve duration of the valves A2 and B2, 11 (FIG.3) designed for the six-stroke engine equals the valve duration of an ordinary valve 10 (FIG.5) used in a four-stroke engine.

Please replace paragraph [0037] with the following amended paragraph:

[0037] As ~~it was aforesaid~~ mentioned above, the arc length 11 (FIG.3) equals the arc length 10 (FIG.5), and the circumference of the cams for the valves A2 and B2 are larger than the circumference of the ordinary ones. Therefore, the valve lift 12 (FIG.3) of the valves A2 and B2 must be reduced with respect to the valve lift of the ordinary one 9 (FIG.5) so that the cams and rocker arms function together smoothly and efficiently. The reduction in the valve lift of the valves A2 and B2 can be compensated by special rocker arms 14 (FIGS.1 and 11). The rocker arm ratio is 1.8 to 1 (H to G), as shown in FIG.6.

Please replace paragraph [0038] with the following amended paragraph:

[0038] Because of the pressure of exhaust gases, the valve lift 13 (FIG.3) of the valves A2 and B2 in an exhaust stroke can be less than the valve lift 12 (FIG.3) of said valves in an intake stroke in order to improve energy efficiency, as the area of the exhaust valves ~~are~~ is smaller than that of the intake valves in a traditional engine.

Please replace paragraph [0041] with the following amended paragraph:

[0041] Due to the suction of the previous intake strokes, air continues to ~~go into~~ enter the inlet ports A1 and B1 and to exit the cylinder head 2 via the outlet ports A3 and B3 along with the exhaust gases during the exhaust stroke and the fifth stroke. The mixing of the fresh air and the exhaust gases in the outlet ports A3 and B3 allows the complete combustion of unburnt gases. This reduces the emissions of pollutants. When the exhaust valves A4 and B4 are closed in the middle of the sixth stroke, pressure inside the cylinder head 2 increases before the intake stroke of the next cycle begins.

Please replace paragraph [0042] with the following amended paragraph:

[0042] As it was mentioned previously, the exhaust valves A4 and B4 close approximately in the middle of the sixth stroke. Of course, the cam lobe 8 (FIG. 4) can be designed in a manner that the valves A4 and B4 close approximately at the end of the sixth stroke [[.]] ~~It causes~~ so that the fresh air does not stagnate inside the cylinder head 2 in the inlet ports A1 and B1 onto the backside of the intake-exhaust valves A2 and B2 , especially at higher RPMs. As soon as [[,]] the intake-exhaust valves A2 and B2 open at the beginning of the intake stroke, the fresh air goes into the cylinder rapidly. Therefore, more fresh air is rapidly available to the cylinders. This improves the suction of the intake stroke, especially at higher RPMs. This could also be done by utilizing a conventional variable valve timing system in order to optimize the engine efficiency according to low or high RPMs, meaning that at low

RPMs valves A4 and B4 close in the middle of the sixth stroke, and at higher RPMs said valves close at the end of the sixth stroke.

Please replace paragraph [0043] with the following amended paragraph:

[0043] Because a working cycle corresponds to 1080 degrees of crankshaft angle in this engine, two pistons of the two cylinders, having subsequent firing order, are 270 degrees apart on a crankshaft in a six-stroke four-cylinder engine. FIGS.7 through 10 show different views of a crankshaft especially designed for the six-stroke four-cylinder engine. FIG.7 shows a symmetrical position of crankpins designed for the six-stroke four-cylinder engine. In said engine with the firing order of 1-3-4-2, crankpins 15, 16, 17, and 18 (FIG.8) are related to cylinder I, cylinder III, cylinder IV and cylinder II, respectively. The vibration of the six-stroke four-cylinder engine utilizing said crankshaft is less than that of a four-stroke , four-cylinder engine with a traditional crankshaft.

Please replace paragraph [0046] with the following amended paragraph:

[0046] Referring to FIGS.11 and 12, ~~There~~ there are totally six valves per cylinder. Four valves A, B, C and D are intake-exhaust valves located at the top of the combustion chamber. There are also two exhaust valves E and F in the cylinder head 19, outside the combustion chamber. Said intake-exhaust valves are actuated by four rocker arms (two of ~~said~~ the rocker arms are visible in FIG.11).

Please replace paragraph [0049] with the following amended paragraph:

[0049] The exhaust valves E and F remain ~~opened~~ open in the fifth stroke. Said exhaust valves close in the middle or at the end of the sixth stroke. In order to achieve best result,

said exhaust valves can be closed in the middle of the sixth stroke at lower RPMs and at the end of the sixth stroke at higher RPMs by utilizing a conventional variable valve timing system.

Please replace paragraph [0050] with the following amended paragraph:

[0050] The area of the exhaust valves E and F must be designed proportionately to cover the exhaust gases expelled from the cylinder 1 via the intake-exhaust valves A, B, C and D completely and efficiently. It is to be noted that the time required for the exhaust valves E and F to return to their seated position is at least four times as much as the time required for the intake-exhaust valves A, B, C, and D. This is because the exhaust valves start ~~closing~~ to close in the middle of the exhaust stroke and [[is]] are completely closed in the middle of the sixth stroke. This is important while designing suitable and efficient valve springs for the valves E and F to further improve the engine efficiency.

Please replace paragraph [0051] with the following amended paragraph:

[0051] In order to prevent the fuel-air mixture from wasting in a gasoline engine with a carburetor when the exhaust valves E and F are open, two of the four valves in the combustion chamber A, B, C, and D can be considered as intake valves and the rest of said valves can be considered as intake-exhaust valves. In this case, only the inlet ports of the intake valves are connected to the carburetor. Therefore, in the combustion chamber, four valves are open in an intake stroke, but only two valves are open in an exhaust stroke.

Please replace paragraph [0052] with the following amended paragraph:

[0052] FIG.13 shows a cylinder head with five valves per cylinder [[.]] , ~~Four~~ four of which are mounted in the cylinder head [[,]] above the combustion chamber. The valves A and C are intake-exhaust valves, but the valves B and D are just intake valves. There is only one exhaust valve E in the side of the cylinder head, outside the combustion chamber. The valves B and D open in the middle of the fifth stroke and close at the beginning of the sixth stroke.